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EXAMINER

LERNER, MARTIN

ART UNIT

PAPER NUMBER

2654

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/392,844

Applicant(s)

AUGUST ET AL.

Examiner

Martin Lerner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 to 24 is/are pending in the application.
- 4a) Of the above claim(s) 16 to 19 and 21 to 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 to 14, 20, and 23 to 24 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No: \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 15 September 2004.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

Applicants' election without traverse of Group I, Claims 1 to 15, 20, 23, and 24 in the reply filed on 11 May 2005 is acknowledged.

Claims 16 to 19 and 21 to 22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11 May 2005.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 23 and 24 are rejected under 35 U.S.C. 102(a) as being anticipated by *Ferrell*.

Regarding independent claim 23, *Ferrell* discloses an interactive speech and language training system, comprising:

"means for converting input text to audible speech in a selected language, the audible speech being patterned after a model" – speech synthesizer 74 forms an audio representation of the vocabulary elements; vocabulary library 68 includes recorded

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digitized representations of vocabulary elements ("models") (column 7, lines 40 to 45: Figure 3); a vocabulary element, such as a word or phrase is presented both visually and aurally to the individual in a native language or a non-native language ("in a selected language") (column 4, lines 33 to 57: Figures 1 and 4);

"means for receiving utterances spoken by a user in response to a prompt to replicate the audible speech" – a vocabulary element is presented both visually and aurally to the individual ("a prompt"), and the individual is given a period of time to initiate a response; the user's response is received; for example, the user may pronounce the vocabulary element (column 4, line 44 to column 5, line 10: Figure 1: Steps 12 to 14; Figure 4);

"means for recognizing the utterances and provide feedback to the user on each sub-word or phoneme portion of the utterances, the feedback being comprised of a confidence measure reflecting a precision at which the user replicates the audible speech in the selected language based on a comparison of the utterances to one of the audible speech and the model, wherein the confidence measure is provided as scores for replication of at least one of paragraphs, sentences, words, sub-words or phonemes" – the responses are evaluated for correctness and appropriate feedback is presented to the user based on the correctness of the response; in the preferred embodiment, the feedback includes both visual and aural feedback; visual feedback is provided by a needle gauge at the bottom of the screen which indicates the degree of correct pronunciation ("confidence measure")(column 5, lines 8 to 25: Figure 1; Steps 18 and 20); icon 84 provides visual feedback in the form of a confidence meter which indicates

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the correctness of a user response (column 8, lines 1 to 3: Figure 4); implicitly, a meter having a needle gauge reflects a numeric "score"; a vocabulary element may be a phoneme, word, phrase, sentence, or paragraph ("at least one of paragraphs, sentences, words and sub-words") (column 4, lines 44 to 51); visual and aural feedback is provided for each vocabulary element, and each vocabulary element can be a phoneme, which is also a sub-word portion.

Regarding claim 24, *Ferrell* discloses appropriate feedback is presented to the user based on the correctness of the response; in the preferred embodiment, both visual and aural feedback is provided; aural feedback includes a synthesized voice which speaks the user's name along with an encouraging response (column 5, lines 7 to 18: Figure 1).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5 to 7, 9, 11 to 14, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Ferrell* in view of *Mostow et al.*

Concerning independent claim 1, *Ferrell* discloses an interactive speech and language training system, comprising:

“a first module configured to [receive repurposed input text from a repurposed source and] convert the input text to audible speech in a selected language, the audible speech being patterned after a model” – speech synthesizer 74 forms an audio representation of the vocabulary elements; vocabulary library 68 includes recorded digitized representations of vocabulary elements (“models”) (column 7, lines 40 to 45: Figure 3); a vocabulary element, such as a word or phrase is presented both visually and aurally to the individual in a native language or a non-native language (“in a selected language”) (column 4, lines 33 to 57: Figures 1 and 4);

“a user interface configured to receive utterances spoken by a user in response to a prompt to replicate the audible speech” – a vocabulary element is presented both visually and aurally to the individual (“a prompt”), and the individual is given a period of time to initiate a response; the user’s response is received; for example, the user may pronounce the vocabulary element (column 4, line 44 to column 5, line 10: Figure 1: Steps 12 to 14; Figure 4);

“a second module configured to recognize the utterances and provide feedback to the user, the feedback being comprised of a confidence measure reflecting a precision at which the user replicates the audible speech in the selected language based on a comparison of the utterances to one of the audible speech and the model, wherein the confidence measure is provided as scores for replication of at least one of paragraphs, sentences, words and sub-words” – the responses are evaluated for correctness and appropriate feedback is presented to the user based on the correctness of the response; in the preferred embodiment, the feedback includes both

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visual and aural feedback; visual feedback is provided by a needle gauge at the bottom of the screen which indicates the degree of correct pronunciation ("confidence measure")(column 5, lines 8 to 25: Figure 1; Steps 18 and 20); icon 84 provides visual feedback in the form of a confidence meter which indicates the correctness of a user response (column 8, lines 1 to 3: Figure 4); a vocabulary element may be a phoneme, word, phrase, sentence, or paragraph ("at least one of paragraphs, sentences, words and sub-words") (column 4, lines 44 to 51); implicitly, a meter having a needle gauge reflects a numeric "score".

Concerning independent claim 1, the only element not expressly disclosed by *Ferrell* is that the input text is a "repurposed input text from a repurposed source". However, *Mostow et al.* teaches a related reading and pronunciation tutor involving speech recognition, where an external application such as a tutor for another domain, may dynamically supply text for the tutor to help the user to read. The content of the input text may be input from any of several sources by any of several processes. Text and resources may be imported from a pre-existing source directly into a knowledge base. An external application, such as a tutor from another domain, may dynamically supply text for the tutor to help the user to read. (Column 8, Lines 51 to 61: Figure 1) The objective is to enable content to be created by operating the tutor in an authoring mode or during normal tutoring operations, thereby eliminating the time and expense of having to prepare a separate tutor for each story or group of stories. (Column 2, Lines 32 to 37) It would have been obvious to supply repurposed input text from a

repurposed source as suggested by *Mostow et al.* in the interactive language instruction system of *Ferrell* for the purpose of saving time and expense of lesson preparation.

Concerning claims 5 and 6, *Ferrell* discloses vocabulary library 68 ("files for storing model pronunciations") includes digital representations of vocabulary elements (column 7, lines 40 to 45: Figure 3); a vocabulary element may be a phoneme, word, sentence, or paragraph (column 4, lines 45 to 49), and is "a predictive model" in that a vocabulary element predicts what phoneme, word, sentence, or paragraph was spoken.

Concerning claim 7, *Ferrell* discloses the presentation is divided into multiple lessons incorporating new vocabulary elements (column 4, lines 55 to 57; column 5, lines 26 to 36: Figure 2).

Concerning claim 9, *Ferrell* discloses unfamiliar vocabulary elements are introduced with a definition ("dictionary files")(column 5, lines 33 to 36: Figure 2).

Concerning claims 11 to 13, *Ferrell* omits tables storing mapping data between word subgroups and vocabulary words, between words and vocabulary words, and between words and examples of parts of speech. However, *Mostow et al.* teaches a related reading and pronunciation tutor where an automatic enhancement function includes a heuristic algorithm using tables. Lookup of information in tables identifies sets of words that rhyme with one another, words that look alike, start or end the same etc., by constructing a key for each word that says what set is that word's equivalence class. The word may also be decomposed into its root word and affixes, which implicitly involves identification of the word's part of speech (Column 9, Line 52 to Column 10,



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Line 33) It would have been obvious to one of ordinary skill in the art to include tables of related words as taught by *Mostow et al.* in the interactive language instruction system of *Ferrell* for the purpose of inferring the pronunciation of words not found in a dictionary.

Concerning claim 14, *Ferrell* omits tables of punctuation, but *Mostow et al.* teaches that the tutoring function takes account of phrase boundaries as indicated by commas and certain other punctuation for the purpose of more accurately aligning recognition results against the text. (Column 5, Lines 11 to 22) It would have been obvious to one of ordinary skill in the art to include a table of punctuation indicating phrase boundaries in the interactive language instruction system of *Ferrell* for the purpose of more accurately aligning recognition results against the text as taught by *Mostow et al.*

Concerning claim 20, *Ferrell* discloses icon 84 provides visual feedback in the form of a confidence meter, which indicates the correctness of a user response (column 8, lines 1 to 3: Figure 4); visual feedback is provided by a needle gauge at the bottom of the screen (column 5, lines 11 to 15); icon 84 provides visual feedback in the form of a confidence meter (column 8, lines 1 to 4); confidence meter is an "icon"; aural feedback includes a synthesized voice which speaks the user's name along with an encouraging response such as "Ron, that's close, let's try again." ("an audio segment") (column 5, lines 14 to 18).

Claims 2 to 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Ferrell* in view of *Mostow et al.* as applied to claim 1 above, and further in view of *Henton*.

Concerning claim 2, *Ferrell* discloses visually displayed vocabulary elements (Figure 4), but omits:

“a third module synchronized to the first module for producing a visual pronunciation aid in the form of an animated image of a human face and head pronouncing the audible speech.” However, *Henton* teaches a method and apparatus for synthetic speech with an animated face, suggesting that it is well known to synchronize imaging of a face with synthetic speech for the purpose of instructing the user. (Column 3, Lines 33 to 49: Figure 3) It would have been obvious to one of ordinary skill in the art to include an animated face module as suggested by *Henton* in the multimodal interactive speech and language training system of *Ferrell* to synchronize an image with synthetic speech for the purpose of instructing a user.

Concerning claim 3, *Henton* teaches a face and head, which is a “transparent” line drawing of a human face and head (Figure 3).

Concerning claim 4, *Henton* teaches a voice table block is utilized by synthesizer to provide all needed phones or use aliases for any needed missing phones (column 5, lines 42 to 52: Figure 2); supplying phones for speech synthesis involves controlling one of “the vocal characteristics of the audible speech”, *i.e.* how a phone is pronounced.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Ferrell* in view of *Mostow et al.* as applied to claim 1 above, and further in view of *Doi et al.*

*Ferrell* discloses language instruction, but omits a mapping of sub-words in a first language to sub-words in a second language for illustrating sound alike comparisons to the student. However, *Doi et al.* teaches a machine translation system, where data display control selects translation possibilities by dividing an original sentence into words as data A and providing a translated sentence with translated words as data B. (Column 7, Lines 13 to 66) The objective is to display the class of data to be selected in order to greatly simplify the selection of translation possibilities. (Column 2, Lines 14 to 49) It would have been obvious to one having ordinary skill in the art to provide a mapping of sub-words between first and second languages as suggested by *Doi et al.* in the multimodal interactive speech and language training system of *Ferrell* for the purpose of simplifying selection of translation possibilities.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Ferrell* in view of *Mostow et al.* as applied to claim 1 above, and further in view of *Adams, Jr. et al.*

*Ferrell* omits a record and playback module for providing playback of selected portions of audible speech and utterances from the user. However, *Adams, Jr. et al.* teaches a related system and method for interactive reading and language instruction including a session database for replay and resumption containing all the information necessary to provide a replay of the joint reading of the text by the companion and the

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student. (Column 4, Lines 17 to 29: Figure 2) Throughout the lesson the audio inputs from both the student and the computer instructor, along with the text as displayed for utterance by each party, are stored at the session database. *Adams, Jr. et al.* suggests that this enhances the learning experience by identifying areas for concentrated effort in the future. (Column 7, Lines 45 to 51) It would have been obvious to one of ordinary skill in the art to include a record and playback module in the system and method for interactive language training of *Ferrell* as suggested by *Adams, Jr. et al.* for the purpose of enhancing the lesson learning experience by identifying areas for concentrated effort.

### ***Response to Arguments***

Applicants' arguments submitted 15 September 2004 have been considered but are moot in view of the new grounds of rejection, necessitated by amendment.

### ***Allowable Subject Matter***

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Applicants' amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

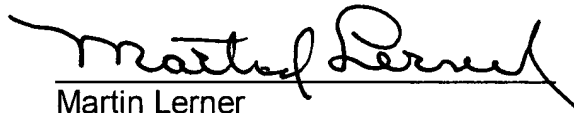
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ML  
July 7, 2005



Martin Lerner  
Examiner  
Group Art Unit 2654